8. *Papilio Zelicaon.* Resembles *P. Machaon.* Distinguished by having the black margins of the wings much broader and of a deeper black; by the lunules of the posterior wings which are not all preceded by spots of blue points; and by the yellow spot in the anal angle of these, which has in its centre a deep black lunule. It inhabits California.

9. *Papilio Rutulus.* Very near *P. Turnus.* The black margins and bands of the wings similar to those of that species, but broader and deeper in tint; the posterior wings with five marginal lunules instead of six. From California.

10. *Papilio Eurymedon.* Allied to the preceding species. The ground colour is white instead of ochreous, as in *P. Rutulus*, and the tail of the hinder wings is broader. It also inhabits California.

The remainder of this number is occupied by reports of the proceedings of the Academy of Sciences for the sittings of the 1st, 10th, 15th and 22nd March; an analysis of the proceedings of the Zoological Society of London; and a note from M. Z. Gerbe containing descriptions of two new species of *Arvicola* (p. 159).

1. *Arvicola leucura.* A. corpore supra cinereo-flavescente, subtus albo; hypochondriis subflavis; pedibus canescentibus; mystacibus crassis, capite longiusculis; auriculis magnis, capite villosis, vellere longioribus; cauda subpilosa utrinque albida. "Basses-Alpes."

2. *Arvicola Selysii.* A. supra fusco-ferruginea, subtus cinerea pallide fulva; hypochondriis rufescentibus; pedibus cinereis; auriculis vellere prominulis, atris, pilosis; mystacibus exilibus; capite brevioribus; cauda superne fusca, interne flavescente, penicillo sordide albo apice instructo. "Basses-Alpes."

M. Guérin also announces that M. Poey, director of the Museum of Natural History of Cuba, is about to publish a work on the natural history of that island, under the title of "Mémoires sur l'Histoire naturelle de l'île de Cuba."

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

January 28, 1851.—R. H. Solly, Esq., F.R.S., in the Chair.

Description of two new genera and some new species of Scutellidæ and Echinolampidæ in the Collection of the British Museum. By John Edward Gray, Esq., F.R.S., P.B.S. etc.

The collection of the British Museum is extremely rich in species of recent *Echinoids*, and fortunate in possessing long series of different ages of several of the species.

Having been recently occupied in arranging and forming a catalogue of these animals, I transmitted to the 'Annals of Natural History' for February a description of several genera and species of *Spatangidæ*.

MM. Agassiz and Desor having recently published, in the Mono-

graph of Echini and other papers on these animals, all the species of these two families then known to them, and as they had every facility for examining the British Museum specimens, the species now to be described are but few in number.

Fam. 1. Scutellidæ.

Genus Echinanthus.

Among the species which have the base concave, of which *E. rosaceus* may be considered the type, are to be added—

1. Echinanthus Australasiæ.

Vent beneath, at a little distance from the edge; back very convex in the middle; upper margin rather flattened, with a slight concavity at the end of the ambulacra; under side flat near the margin, deeply concave in the middle; spines of the under side near mouth very fine.

Hab. Australia; N.S.W., Brisbane Water.

2. Echinanthus testudinarius.

Vent beneath a little within the edge, depressed; back slightly raised, evenly convex; under surface rather concave from the edge.

Hab. Indian Ocean; Borneo.

3. Echinanthus oblongus.

Ovate-oblong, elongate, rounded at the end; sides thick, rounded; back depressed round the end of the ambulacra; crown rather convex; ambulacra ovate, lanceolate, broad, and closed at the end; under side concave nearly to the edge; ambulacral grooves indistinct; vent near the margin.

Hab. Philippines; Siquijor.

4. Echinanthus productus.

Shell ovate, elongate, the hinder end produced and flattened, the edge rather thick, thinner behind; the ambulacral petal broad, the bands not quite united at the end; under side concave to the margin; vent near the margin.

Hab. ——?

5. Echinanthus Coleæ.

Shell ovate, subpentagonal, depressed; margin thick, rounded; back depressed as far as the end of the ambulacra, and then rather convex in the middle, the under side concave nearly to the edge; ambulacral petal ovate lanceolate, closed at the end; vent near the margin.

Hab. Mauritius. Lady Mary Cole.

To those which have a flat base may be added—

6. Echinanthus explanatus.

Depressed, much expanded, centre of the back rather convex; ambulacra occupying rather more than half the space between the vertex and margin, the lines of pores of the anterior pair and posterior odd one far apart at the end; cavity with thin concentric lines of short compressed columns near the margin; jaws depressed.

Hab. Mauritius?

Genus Rotula.

The British Museum series induces me to believe that *Rotula digitata* of Agassiz is not distinct from *R. Rumphii*, as M. Agassiz first considered it to be.

Genus Echinodiscus.

I cannot find any permanent difference to distinguish *Lobophora bifissa* from *L. aurita*; they are found together in the same habitat in the Red Sea.

Genus Mellita.

The larger spines on the back of this, the former, and succeeding genus are short, equal in size, and furnished with a more or less spherical head.

The Museum series of specimens show a very gradual passage between the *Echini* which have been called *Mellita testudinaria* and *M. quinquefora* by Agassiz.

The species which have six slits on the disc are found on the coast of Tropical America, and others on the shores of the Red Sea; I believe they form two species, which appear to have been confounded under one name.

The American *Mellita hexapora* has only narrow linear bands of larger tubercles (bearing the larger spines) between the branched lines radiating from the mouth on the under surface, and these lines are very much branched.

Mellita similis and *M. lobata* of Agassiz, also from the West Indies; the first appears to be only a variety, and the latter a monstrosity of this species.

The Red Sea species I have named

Mellita erythræa.

Shell depressed, with five ambulacra and one posterior interambulacral slit; inferior oral grooves branched, branches very slightly divided; the larger spines and tubercles in a broad band, occupying nearly the whole interambulacral space between the inferior oral grooves.

Hab. Red Sea. Sir J. Gardiner Wilkinson.

There is a new genus which has the edge of the disk perforated and the vent near the mouth, as in *Echinoglyphus*, but differs in the oral grooves being more simple and only branched near the edge, in the lanceolate form of the ambulacra, and in the square form of the tesseræ of the ambulacral zones beyond the tip of the ambulacra.

Genus Leodia.

Body depressed, with a posterior slit and five perforations between the end of the ambulacra and edge; the marginal ambulacral tesseræ squarish, like the interambulacral ones; ambulacra lanceolate, acute at the tip, the anterior one most narrow and longest; pores united by a groove; ovarial plate pentangular; ovarial pores three; oral grooves simple, slightly impressed, converging towards the margin in front

of the ambulacral perforations; vent near the mouth, in front of the anal perforation, with a group of three or four larger spines between it and the mouth.

1. Leodia Richardsonii.

Body suborbicular, slightly depressed, five-lobed, hinder edge transverse; ambulacra lanceolate, not reaching to the discal perforations; discal perforations ovate, small, the anterior smaller, the hinder largest, with two pairs of rather large tesseræ between the ends of the ambulacra and the foramen, the upper pair subtrigonal; oral grooves simply forked near the edge.

Hab. West Indies.

The single specimen I have seen of this species was presented by Sir John Richardson. It is rather deformed and sinuous on the right side, the hinder lateral perforation being nearly obliterated on that side.

In *Echinoglyphus* the tesseræ of the ambulacral bands are broad and band-like between the ambulacra and the ambulacral slits.

Genus Echinoglyphus, Van Phelsum. The Encope of Agassiz.

The large Brazilian species of this genus appear to be very variable. The young specimens have large notches on the edge of the shell, and as the animal increases in size, the marginal edges of these notches more or less approximate together, and sometimes even become united, so as to transform the notch into a perforation. M. Agassiz on these variations has formed several species; but the Museum series, from the Brazils and other parts of the east coast of Tropical America, show that they are all mere variations of the species which Van Phelsum called *Echinoglyphus frondosus*, and Lamarck *Scutella emarginata*. I am induced to believe that *Scutella quinqueloba* of Eschscholtz, *Encope Valenciennesii*, *Encope subclausa*, *Encope oblonga*, and *Encope Michelini*, are only varieties of this species: they are all remarkable for the large size and longly-rayed star-like form of the madreporiform plate.

Genus Fibularia.

The following species is peculiar as having an oblong, longitudinal vent.

1. Fibularia oblonga.

Shell ovate, elongate, ventricose; vent oblong, longitudinal, according to the axis of the shell.

Hab. N. Australia.

Fam. 2. Echinolampidæ.

Genus Echinolampas.

The species of this genus may be divided into two sections, according to the form of the ambulacra.

Echinolampas oviformis and its allies have the porous bands of the anterior and other pair of ambulacra equal; the lower side of the shell flat; the mouth oblong, transverse, with (5) tubercles between the oral ambulacra.

The other species have the anterior porous band of the anterior pair of ambulacra shortest; under side rounded, convex; mouth oblong, transverse, large, marked with no tubercles, and only very rudimentary oral ambulacra.

1. Echinolampas depressus.

Ovate, depressed, subpentangular; back regularly convex.
Hab. ——?

Genus Mortonia.

Shell ovate, thin, rather produced in front, rounded behind, covered with small tubercles; vertex central, convex; internal cavity quite simple; ambulacra petaloid, narrow, open at the end; bands rather diverging; pores rather crowded, united by an oblong groove; beneath concave, especially near the mouth and vent; mouth rather large, roundish oblong, transverse, without any ambulacral star; vent large, transverse, oblong, in the middle of the space between the mouth and hinder edge; ovarial pores four; madreporiform plate small, central.

? Echinocyamus, sp., *Desmoulin.*
Mortonia, *Gray, Cat. Echinoida in Brit. Mus.*

This genus differs from *Echinocyanus* in the thinness of the shell, and especially in the ambulacra being larger, more perfect, and in the pores of the ambulacra being united in pairs by a cross groove. It differs from the fossil genus *Pygaulus* in the vent being inferior, intermediate between the mouth and edge, and transverse.

This genus is named after Dr. Morton, the historian of Northamptonshire, who first attempted to arrange the fossil *Echini* into generic groups.

Mortonia australis.

Elliptical, depressed, rather acute in front, rounded behind, under side concave near the mouth and vent; vent large, oblong, transverse, in the centre between the mouth and hinder margin.

Fibularia australis, *Desm. Tab. Syn.* 240.
Echinocyamus australis, *Agassiz et Desor, l. c.* 140.
Hab. South Sea. Mallet.

February 11.—William Yarrell, Esq., Vice-President, in the Chair.

The following papers were read:—

1. Description of a new genus and family of Cyclosaurian Lizards, from Para. By J. E. Gray, Esq., F.R.S., P.B.S.

This interesting Lizard has lately been purchased by the Museum, from a collection of Saurians recently made by Messrs. Wallace and Bates, during their excursion within a circuit of about 300 miles of Para.

It is exceedingly interesting as presenting an entirely new form, different in many particulars from any before observed; so much so, that I am induced to form for it a new family, to be placed near *Anadiadæ* and *Cherfolidæ*, which may be thus characterized:—

1. Iphisadæ.

Scales of the back, belly, nape and throat smooth, broad, six-sided, transverse, forming a single series on each side of the tail, narrow, lanceolate, elongate, regularly keeled, in rings alternating with each other; head shielded; chin shielded; ear open, circular; femoral pores distinct.

Iphisa.

Head depressed, shielded; anterior frontal single, broad, four-sided; posterior frontals two, small, subtrigonal; vertebral single, rather elongate; posterior vertebral two, small, five-sided; occipital three, larger, middle one narrow, longitudinal; superciliary shield 3–3, hinder smaller, anterior smallest; temple with small shields; labial shields moderate; rostral and mental broad; chin entirely shielded; anterior single, transverse, first pair very large, triangular, covering nearly the whole of the chin, second pair small, at the outer hinder angle of the former; nostrils lateral, in the lower edge of the nasal shield, between it and the labial shield; eyes large, lateral; eyelids scaly?; ears circular, open; nape, back, throat and belly covered with two series of broad, smooth scales; sides rounded, covered with three or four series of six-sided, smooth scales, placed in oblique series; chest with a collar of five scales, the central one elongate, triangular, the lateral ones four-sided, the outer pair very narrow; preanal shields three, the central one elongate, narrow, subtriangular; limbs short, weak, covered with broad smooth shields above, the hinder shield beneath; femoral pores 10–10, distinct, the series nearly united in front of the preanal plates; toes 5–5, unequal, the inner very short, the outer hinder separated from the other by a space like a thumb; tail elongate, cylindrical, tapering, covered above and below with whorls of narrow, elongate, regular, lanceolate, strongly keeled pointed scales, those of each series alternating with those that succeed and follow it.

1. Iphisa elegans.

Olive-brown black marbled; sides darker, white varied; chin and beneath yellowish white.

Hab. Para.

Descriptions of some New Birds in the Museum of the Earl of Derby. By Dr. Kaup.

During my visit to London last year I had the honour to receive an invitation from the Earl of Derby, to visit his collection at Knowsley Hall, with permission to use the materials I might find there for the monography of *Muscicapidæ* on which I was engaged. Of that collection I had already formed very high expectations; but I was agreeably surprised by finding them all surpassed, so great is the richness of this noble collection. It contains more than 14,000 specimens of stuffed birds, besides skins, which are not yet numbered. What adds still greater interest to this collection is, that it contains a large number of the original specimens described by Latham and

other English authors, of whose writings these specimens are the only explanation. To the pleasure of working in so rich a collection must be added the command of a colossal library, to which not one work of importance is wanting. All this, with the aviaries of magnificent living birds, from every zone of the world, must have the greatest charm for the naturalist, and make Knowsley Hall for him a perfect Eden, which once seen shall never be forgotten.

The new birds described here include only one portion of my researches, because I could not finish so many genera. The materials of the very rich family of *Muscicapidæ* are too extensive, for a complete elucidation during the limited period of my visit from a foreign country; I wish my descriptions therefore to be considered only as fragments.

The object of my visit to England was to collect materials for a complete monography of the *Muscicapidæ*; but notwithstanding the many favours I received, and the extreme liberality with which my labours were facilitated in every English collection, I must confess with sorrow that I shall never be able to make a complete whole (perfectly free from objection), with materials collected in different museums. A perfect arrangement can only be achieved by the study of the materials present together, so that at every moment a comparison may be made between any two or any number of the species.

Were it my good fortune to assemble the whole materials of one family in my rooms at Darmstadt, one winter only would be necessary to finish each family in such a manner as to satisfy the requirements of modern science.

Were any one museum willing to accord me the whole materials in its possession, it is probable that all the supplementary species not contained in that collection would be readily furnished by other museums, as the absence of a few species for a short period would be of little or no importance.

That we can only climb to the summit of our science by means of well-made monographies, there can be no possible doubt; and I attach a higher value to a monography constructed on philosophical principles, than to the best fauna of any single part of the world: for only by a strict comparison of the birds of the five parts of the globe can we know what is a family, a subfamily, genus, species and subspecies. Only in this way—a difficult way no doubt—can we learn the true harmony of nature; and thus shall we be filled with admiration, when we see that every species, genus, family or order represents a certain type, and must receive its place in a scheme of classification according to fixed laws, which man must discover, but over which he has no control.

This charm can never belong to merely descriptive ornithology, because even the best descriptions are only like mosaic stones, which, when placed without rules, or arranged according to false principles, give us only a scattered mass of heterogeneous materials, or a picture destitute of truth.

These claims I have urged over and over again in my dissertations, but hitherto without effect. When shall the time arrive when a

catholic spirit shall guide the destinies of science, and lead onward to that triumph of true knowledge, in which every director of a museum, and every student of the works of nature, may take his part?

At present it is impossible that a naturalist can without help arrange the whole materials of one class in his museum. Our museums are little more than great exhibitions for the people, who look too often only to colour, instead of being stores of nature's treasures, ready to be communicated to every naturalist who has proved himself worthy of the name. Every museum ought to accord freely and liberally the wished-for materials, for this is the cheapest way in which a family can be properly named and accurately classed. The common excuse that the lent materials might come to harm, is little more than an excuse. Time and destructive insects will do the harm, without the slightest advantage to science.

Nisus (seu Accipiter) chionogaster, Kaup.

Diagnosis.—Above dark blue grey, beneath pure white.

Description.—The male is less than the *Nis. fringillarius*. Above dark blue grey, the crown, lorum, and a stripe over the eye- and ear-cover feathers more approaching to black; ear-covering, cheek and crop with fine black quill lines; tail with three black bands and a broader band at the end, which is white bordered; the underside of the tail has the bands more silver-grey; the first tail-feather with five bands before the large end-band; the wings on the inner side with four bands before the large end-band. Before the emarginations the bands are grey, and after them whiter.

The larger female with a white eye-stripe, and broader black quill stripe on the crop; the cover feathers of the tibia with a fine rufous tint.

According to the ticket of M. de Lattre, the iris of the female is orange, and that of the male dark brown, like burnt sienna.

These two specimens were procured by M. de Lattre in Coban, in the year 1843.

Dimensions in millimetres.—	♂		♀
Head	40	.....	45
Gape	16	.....	19
Wings	173	.....	206
Tail	140	.....	160
Tibia	47	.....	56
Middle toe without nail	32	.....	37

We possess several species in the genus *Nisus*, Cuv., seu *Accipiter* of the English authors. Most of these are very near to the common Sparrow-Hawk; and I think some of them, like the North American *fuscus* seu *velox*, the African *rufiventris*, the *madagascariensis*, and perhaps the *erythrocnemius* of G. Gray, are not true species, but that they are subspecies of the common European *Nisus fringillarius*, forming a group amongst themselves, and exhibiting by no means the decided differences apparent between *fringillarius* and *pileatus*, or *pileatus* and *tachiro*.

In the same near relation to the *chiquera* of Western Africa do I

consider the true *chiquera*, Vaill. 30, from India; and this opinion I found on the following characteristics.

The West African *chiquera* has the body above darker cinereous, with very distinct narrow black lines, and the stripe beneath the eye, and the black stripe over the eye and ear-covers, are more distinct; the rufous head with darker fine stripes.

The Indian *chiquera* has the head without stripes; the body above lighter grey, with very few traces of black bands; and the black semicircle round the eye is shorter and not so complete.

But these slight differences will not justify us in considering the West African *chiquera* as a true species distinct from the Indian true *chiquera*; it is only a subspecies of the latter true species. As such we must make a distinction, and as such it must be accorded a place in the system. I think the best way is to give a description of the oldest known subspecies, and arrange all the other subspecies with different names, distinguished by the letters of the alphabet, *a*, *b*, *c*, &c., amongst the true species. In this way it would only be necessary to give a very short description of the subspecies, consisting of the few marks by which it differs from the old known subspecies. Until we have discovered all the species contained in one and the same subgenus, we can never say with certainty whether a given specimen represents a true species, or only a subspecies; I must therefore confess that in the following descriptions of the family *Muscicapidæ*, it is very probable that I have described as species some specimens which hereafter will be arranged as subspecies, when the whole species composing the subgenus are completely known.

One of the most interesting birds in the collection of Lord Derby is a little Falcon, belonging to the subfamily *Falconinæ*, which enabled me to correct the characters of the genus *Harpagus*.

The characters must be changed as follows:—Bill large, with two teeth, slender and indistinct, or strong and distinct; wings short, and in the proportions of the quills very like *Nisus* seu *Accipiter*; toes short, and the inner and outer toes of the same length.

The genus *Harpagus* must be divided into two subgenera.

The older subgenus *Harpagus* must be distinguished by the following characters:—Two strong and distinct teeth; the nostrils placed near the end of a soft membrane covering a large cavity; tibia with scales not divided.

Two species, *diodon* and *bidentatus*.

The other subgenus, in which this new species must be placed, must be characterized:—Two slender indistinct teeth; the nostrils round, very small, and bored in the nasal bones; the first wing-feathers with very distinct emarginations, the fourth the longest; tibia with whole and divided scales.

I give this subgenus the name of *Spiziapteryx*, and the species I have named

HARPAGUS CIRCUMCINCTUS.

Diag.—Size of the Kestril, with white stripe over the eye, which

encircles the whole head and is connected with a white collar; the tail-covers, above and beneath, white.

Descr.—Rufous ash-grey, beneath lighter, with dark brown shaft-stripes; the white stripe over the eye, and the collar black marginated; tibia-covers white; the arm and hand wings white at the roots, and like the stronger cover-feathers, with white spots and bands on the inner and outer webs; the first wing-feather without spots on the exterior web, and with fine white spots on the interior web; tail black-brown; beneath with white roots and three small white bands and an end band; the fifth without spots on the exterior web; the fourth with only traces; the third exhibits round white spots; and the two exterior feathers are white-banded. From this very irregular distribution of spots, the tail, seen from above, exhibits a very irregular drawing. Cere, naked eye region and feet yellow; nails dark brown.

I apprehend that this specimen, the only one in England, is not a very old bird. Lord Derby received this bird from Chili, by Mr. Bridges.

Dimen.—Head, 49; bill, from the cere, 16; from the gape, 22; height, 13; breadth, 20; over wing, 123; tip of the wing, 56; middle tail-feather, 148; outer tail-feather, 115; tarsus, 45; middle-toe, 26; nail, 11; outer-toe, 17½; nail, 10; inner-toe, 16; nail, 12; after-toe, 13; nail, 13.

A new species of the subgenus SAUROPHAGUS, Swains.

In the little subgenus *Saurophagus*, Swains., we had, till now, only three species. These are, *lictor*, *sulphuratus*, and *flavus*. I received by Mr. Wollweber from Zacatecas in Mexico an only specimen of a fourth species; but I found in the collection of Lord Derby, and in the British Museum, a great number of the same species.

To this species I have given the name of *Derbyanus*, as a mark of my respect for that distinguished patron of ornithological science, the Earl of Derby, President of the Zoological Society.

All the species of this little subgenus have the same general colouring, and are distinguished only by very few characters taken from the colouring of the wings and from the dimensions. The young ones have, like the young birds of *Scaphorhynchus*, the bill shorter and bigger, and the head is black, without the beautiful crest of the old birds. The old birds have a white front, connected with a white band over the eyes and over the black ear-covers, and surrounding the black head, which in the middle is ornamented with a yellow crest; the chin and underpart of the neck white; breast, belly, under-wings and tail-covers yellow; back olive-coloured; wings and tail brown, with red margins.

SAUROPHAGUS LICTOR, Gray & Mitch. Genera of Birds, t. 62.

Lanius lictor, Licht.—*Saurophagus pusillus*, Swains.—*Swainsonii*, Gould.

Diag.—Only the margins of the outer webs of the wings rufous;

wings 86 mm. long. It shows the finest bill, a more graduated tail, and the smallest dimensions.

Hab. Brazil, Para.

SAUROPHAGUS SULPHURATUS.

Lanius, Gmel.—*Tyrannus*, Vieill. Enl. 296.

Diag.—Only the margins of the outer webs of the wings rufous; wings 110–114 mm. long.

Hab. Amer. meridional.

SAUROPHAGUS FLAVUS, Gray.

Corvus, Gmel.

Diag.—Only the margins of the outer webs of the wings rufous; wings 126–130 mm. long.

Hab. Brazil meridional. Bolivia.

SAUROPHAGUS DERBYANUS, Kaup.

Diag.—The wing-feathers from the second to the sixteenth have the whole outer webs on the greatest part of the length rufous; wings 128 mm. long.

Hab. Zacatecas, in Mexico.

Comparison of the dimensions.—

	Saur. lictor.	*Saur. sulphuratus.*	*Saur. flavus.*	*Saur. Derbyanus.*
Head	41	53–58	60–62	60
Bill, from the forehead	22	29–30	35	32
—— from the gape	26	32–36	40–42	38
Wings	86	110–114	130	128
Tail	74	82–86	100	92
Tarsus	16	25–27	28	29
Middle-toe with the nail	—	21	30	26

In these dimensions *Saurophagus Derbyanus* is very near to *Saur. flavus*.

In what relation with the subgenus *Scaphorhynchus*, Pr. Max., this little subgenus *Saurophagus* is to be placed, I shall determine in my next monography, *Muscicapidæ*.

Of the subgenus *Scaphorhynchus*, Ch. Bonaparte, in his very useful Conspectus, has given five species:—*pitangua*, *flaviceps*, *atriceps*, *audax*, and *chrysocephalus*.

The species *flaviceps* and *atriceps* must go down, because *flaviceps*, Sw., is a female, and *atriceps* a young bird of *pitangua*; *audax* does not belong to this subgenus, and is to be placed in the neighbourhood of *rufinus*, Spix, and *circumcinctus*, Sw., which have the same bill and similar covering.

We have only two species, *pitangua* and *chrysocephalus*, Tchudi, in the section of *Scaphorhynchus*.

Scaphorhynchus, with its broad bill, shorter and feebler tarsi and toes, represents more the Swallow type, and must be placed in the second rank of his genus.

Before I finish I may allow myself the observation, that, till now, the whole family of *Muscicapidæ* has been in a condition of the greatest confusion, and that the greatest number of genera must go down, or must be considered as subgenera of some larger genera.

ROYAL SOCIETY.

May 27.—"Upon the Morphology of the Cephalous Mollusca, as illustrated by the Anatomy of certain Heteropoda and Pteropoda." By Thomas Huxley, Esq., F.R.S.

In the present memoir the author endeavours to determine, upon anatomical and embryological grounds, the true homologies of the different organs of the Cephalous Mollusca, and thence to arrive at some idea of the archetypal form, as definite modifications of which the existing molluscous forms may be considered to have arisen.

The Pelagic Heteropoda and Pteropoda, from their small size and extreme transparency, are peculiarly favourable subjects for the anatomical part of this investigation, and it is from a detailed examination of those systems of organs which are of importance for the purpose that the author deduces the following conclusions:—

1. In the *Heteropoda* the intestine is bent towards the dorsal or *hæmal* side in consequence of the development behind the anus of the visceral "hernia," which is therefore called a *post-abdomen*.

2. In the *Heteropoda*, the "foot," in its most perfect condition, consists of three portions, a *propodium*, *mesopodium* and *metapodium*.

3. The *Heteropoda* are more or less prosobranchiate, the degree depending upon the amount of development of the post-abdomen.

4. In the *Pteropoda* the intestine is bent towards the ventral or *neural* side, in consequence of the development of the visceral "hernia" in front of the anus. It is therefore called an *abdomen*.

5. In the *Pteropoda*, the foot, besides the parts mentioned above, possesses an additional appendage, the *epipodium*, which forms the expanded wing characteristic of the group.

6. The *Pteropoda* are opisthobranchiate, prosobranchiate, or intermediate in character, according to the degree of development of the *abdomen*.

The *Heteropoda* and *Pteropoda*, then, may be considered to represent two opposite phases of the modification of the molluscous archetype.

In the second part of the paper, the author endeavours, by carefully collating the known facts of the development of the Mollusca, to ascertain (*a*) the primary form of all cephalous Mollusca, and (*b*) the mode in which, in the course of development, this embryonic form becomes metamorphosed into the adult form; in order, if possible, to account, on the safe basis of ascertained morphological laws, for the peculiar modifications of structure which have been found, anatomically, to obtain among the Heteropoda and Pteropoda.

He finds that it is possible not only to deduce the structure of the Heteropoda and Pteropoda from a simple and symmetrical archetype by such morphological laws, but that all the cephalous Mollusca